Sequence Listing

<110> Genentech, Inc.
Ashkenazi, Avi J.
Fong, Sherman
Goddard, Audrey
Gurney, Austin L.
Napier, Mary A.
Tumas, Daniel
Wood, William I.

<120> COMPOUNDS, COMPOSITIONS AND METHODS FOR THE TREATMENT OF DISEASES CHARACTERIZED BY A33- RELATED ANTIGENS

<130> P1216R1PCT

<140> US 09/254,465
<141> 1999-03-05

<150> PCT/US98/24855
<151> 1998-11-20

<150> US 60/066,364
<151> 1997-11-21

<150> US 60/078,936
<151> 1998-03-20

<150> PCT/US98/19437
<151> 1998-09-17

<160> 30

<210> 1
<211> 299
<212> PRT
<213> Homo sapiens

<400> 1

Met	Gly	Thr	Lys	Ala	Gln	Val	Glu	Arg	Lys	Leu	Leu	Cys	Leu	Phe	
1				5				10						15	
Ile	Leu	Ala	Ile	Leu	Leu	Cys	Ser	Leu	Ala	Leu	Gly	Ser	Val	Thr	
			20					25						30	
Val	His	Ser	Ser	Glu	Pro	Glu	Val	Arg	Ile	Pro	Glu	Asn	Asn	Pro	
			35					40						45	
Val	Lys	Leu	Ser	Cys	Ala	Tyr	Ser	Gly	Phe	Ser	Ser	Pro	Arg	Val	
			50					55						60	
Glu	Trp	Lys	Phe	Asp	Gln	Gly	Asp	Thr	Thr	Arg	Leu	Val	Cys	Tyr	
			65					70						75	
Asn	Asn	Lys	Ile	Thr	Ala	Ser	Tyr	Glu	Asp	Arg	Val	Thr	Phe	Leu	
			80					85						90	
Pro	Thr	Gly	Ile	Thr	Phe	Lys	Ser	Val	Thr	Arg	Glu	Asp	Thr	Gly	
			95					100						105	
Thr	Tyr	Thr	Cys	Met	Val	Ser	Glu	Glu	Gly	Gly	Asn	Ser	Tyr	Gly	
			110					115						120	

```
Glu Val Lys Val Lys Leu Ile Val Leu Val Pro Pro Ser Lys Pro
                125                 130                 135

Thr Val Asn Ile Pro Ser Ser Ala Thr Ile Gly Asn Arg Ala Val
                140                 145                 150

Leu Thr Cys Ser Glu Gln Asp Gly Ser Pro Pro Ser Glu Tyr Thr
                155                 160                 165

Trp Phe Lys Asp Gly Ile Val Met Pro Thr Asn Pro Lys Ser Thr
                170                 175                 180

Arg Ala Phe Ser Asn Ser Ser Tyr Val Leu Asn Pro Thr Thr Gly
                185                 190                 195

Glu Leu Val Phe Asp Pro Leu Ser Ala Ser Asp Thr Gly Glu Tyr
                200                 205                 210

Ser Cys Glu Ala Arg Asn Gly Tyr Gly Thr Pro Met Thr Ser Asn
                215                 220                 225

Ala Val Arg Met Glu Ala Val Glu Arg Asn Val Gly Val Ile Val
                230                 235                 240

Ala Ala Val Leu Val Thr Leu Ile Leu Leu Gly Ile Leu Val Phe
                245                 250                 255

Gly Ile Trp Phe Ala Tyr Ser Arg Gly His Phe Asp Arg Thr Lys
                260                 265                 270

Lys Gly Thr Ser Ser Lys Lys Val Ile Tyr Ser Gln Pro Ser Ala
                275                 280                 285

Arg Ser Glu Gly Glu Phe Lys Gln Thr Ser Ser Phe Leu Val
                290                 295
```

<210> 2
<211> 321
<212> PRT
<213> Homo sapiens

<400> 2

```
Met Gly Ile Leu Leu Gly Leu Leu Leu Leu Gly His Leu Thr Val
  1               5                  10                  15

Asp Thr Tyr Gly Arg Pro Ile Leu Glu Val Pro Glu Ser Val Thr
                20                  25                  30

Gly Pro Trp Lys Gly Asp Val Asn Leu Pro Cys Thr Tyr Asp Pro
                35                  40                  45

Leu Gln Gly Tyr Thr Gln Val Leu Val Lys Trp Leu Val Gln Arg
                50                  55                  60

Gly Ser Asp Pro Val Thr Ile Phe Leu Arg Asp Ser Ser Gly Asp
                65                  70                  75

His Ile Gln Gln Ala Lys Tyr Gln Gly Arg Leu His Val Ser His
                80                  85                  90

Lys Val Pro Gly Asp Val Ser Leu Gln Leu Ser Thr Leu Glu Met
                95                 100                 105
```

```
Asp Asp Arg Ser His Tyr Thr Cys Glu Val Thr Trp Gln Thr Pro
                110                 115                 120

Asp Gly Asn Gln Val Val Arg Asp Lys Ile Thr Glu Leu Arg Val
                125                 130                 135

Gln Lys Leu Ser Val Ser Lys Pro Thr Val Thr Thr Gly Ser Gly
                140                 145                 150

Tyr Gly Phe Thr Val Pro Gln Gly Met Arg Ile Ser Leu Gln Cys
                155                 160                 165

Gln Ala Arg Gly Ser Pro Pro Ile Ser Tyr Ile Trp Tyr Lys Gln
                170                 175                 180

Gln Thr Asn Asn Gln Glu Pro Ile Lys Val Ala Thr Leu Ser Thr
                185                 190                 195

Leu Leu Phe Lys Pro Ala Val Ile Ala Asp Ser Gly Ser Tyr Phe
                200                 205                 210

Cys Thr Ala Lys Gly Gln Val Gly Ser Glu Gln His Ser Asp Ile
                215                 220                 225

Val Lys Phe Val Val Lys Asp Ser Ser Lys Leu Leu Lys Thr Lys
                230                 235                 240

Thr Glu Ala Pro Thr Thr Met Thr Tyr Pro Leu Lys Ala Thr Ser
                245                 250                 255

Thr Val Lys Gln Ser Trp Asp Trp Thr Thr Asp Met Asp Gly Tyr
                260                 265                 270

Leu Gly Glu Thr Ser Ala Gly Pro Gly Lys Ser Leu Pro Val Phe
                275                 280                 285

Ala Ile Ile Leu Ile Ile Ser Leu Cys Cys Met Val Val Phe Thr
                290                 295                 300

Met Ala Tyr Ile Met Leu Cys Arg Lys Thr Ser Gln Gln Glu His
                305                 310                 315

Val Tyr Glu Ala Ala Arg
                320
```

<210> 3
<211> 390
<212> DNA
<213> artificial

<220>
<221> artificial sequence
<222> 1-390
<223> artificial sequence

<400> 3
cttcttgcca actggtatca ccttcaagtc cgtgacacgg gaagacactg 50

ggacatacac ttgtatggtc tctgaggaag gcggcaacag ctatggggag 100

gtcaaggtca agctcatcgt gcttgtgcct ccatccaagc ctacagttaa 150

catcccctcc tctgccacca ttgggaaccg ggcagtgctg acatgctcag 200

aacaagatgg ttccccacct tctgaataca cctggttcaa agatgggata 250

gtgatgccta cgaatcccaa aagcacccgt gccttcagca actcttccta 300

tgtcctgaat cccacaacag gagagctggt ctttgatccc ctgtcagcct 350

ctgatactgg agaatacagc tgtgaggcac ggaatgggta 390

<210> 4
<211> 726
<212> DNA
<213> artificial

<220>
<221> artificial sequence
<222> 1-726
<223> artificial sequence

<400> 4
tctcagtccc ctcgctgtag tcgcggagct gtgttctgtt tcccaggagt 50

ccttcggcgg ctgttgtgct caggtgcgcc tgatcgcgat ggggacaaag 100

gcgcaagctc gagaggaaac tgttgtgcct cttcatattg gcgatcctgt 150

tgtgctccct ggcattgggc agtgttacag ttgcactctt ctgaacctga 200

agtcagaatt cctgagaata atcctgtgaa gttgtcctgt gcctactcgg 250

gcttttcttc tccccgtgtg gagtggaagt ttgaccaagg agacaccacc 300

agactcgttt gctataataa caagatcaca gcttcctatg aggaccgggt 350

gaccttcttg ccaactggta tcaccttcaa gtccgtgaca cgggaagaca 400

ctgggacata cacttgtatg gtctctgagg aaggcggcaa cagctatggg 450

gaggtcaagg tcaagctcat cgtgcttgtg cctccatcca agcctacagt 500

taacatcccc tcctctgcca ccattgggaa ccgggcagtg ctgacatgct 550

cagaacaaga tggttcccca ccttctgaat acacctggtt caaagatggg 600

atagtgatgc ctacgaatcc caaaagcacc cgtgccttca gcaactcttc 650

ctatgtcctg aatcccacaa caggagagct ggtctttgat cccctgtcag 700

cctctgatac tggagaatac agctgt 726

<210> 5
<211> 1503
<212> DNA
<213> artificial

<220>
<221> artificial sequence
<222> 1-1503
<223> artificial sequence

<400> 5
gcaggcaaag taccagggcc gcctgcatgt gagccacaag gttccaggag 50

atgtatccct ccaattgagc accctggaga tggatgaccg gagccactac 100

acgtgtgaag tcacctggca gactcctgat ggcaaccaag tcgtgagaga 150

taagattact gagctccgtg tccagaaact ctctgtctcc aagcccacag 200

tgacaactgg cagcggttat ggcttcacgg tgccccaggg aatgaggatt 250

agccttcaat gccagggttc ggggttctcc tcccatcagt tatatttggt 300

ataagcaaca gactaataac cagggaaccc atcaaagtag caaccctaag 350

taccttactc ttcaagcctg cggtgatagc cgactcaggc tcctatttct 400

gcactgccaa gggccaggtt ggctctgagc agcacagcga cattgtgaag 450

tttgtggtca aagactcctc aaagctactc aagaccaaga ctgaggcacc 500

tacaaccatg acataccct tgaaagcaac atctacagtg aagcagtcct 550

gggactggac cactgacatg gatggctacc ttggagagac cagtgctggg 600

ccaggaaaga gcctgcctgt ctttgccatc atcctcatca tctccttgtg 650

ctgtatggtg gtttttacca tggcctatat catgctctgt cggaagacat 700

cccaacaaga gcatgtctac gaagcagcca gggcacatgc cagagaggcc 750

aacgactctg gagaaaccat gagggtggcc atcttcgcaa gtggctgctc 800

cagtgatgag ccaacttccc agaatctggg gcaacaacta ctctgatgag 850

ccctgcatag gacaggagta ccagatcatc gcccagatca atggcaacta 900

cgcccgcctg ctggacacag ttcctctgga ttatgagttt ctggccactg 950

agggcaaaag tgtctgttaa aaatgcccca ttaggccagg atctgctgac 1000

ataattgcct agtcagtcct tgccttctgc atggccttct tccctgctac 1050

ctctcttcct ggatagccca aagtgtccgc ctaccaacac tggagccgct 1100

gggagtcact ggctttgccc tggaatttgc cagatgcatc tcaagtaagc 1150

cagctgctgg atttggctct gggcccttct agtatctctg ccgggggctt 1200

ctggtactcc tctctaaata ccagagggaa gatgcccata gcactaggac 1250

ttggtcatca tgcctacaga cactattcaa ctttggcatc ttgccaccag 1300

aagacccgag gggaggctca gctctgccag ctcagaggac cagctatatc 1350

caggatcatt tctctttctt cagggccaga cagcttttaa ttgaaattgt 1400

tatttcacag gccagggttc agttctgctc ctccactata agtctaatgt 1450

tctgactctc tcctggtgct caataaatat ctaatcataa cagcaaaaaa 1500

aaa 1503

<210> 6
<211> 319
<212> PRT
<213> Homo sapiens

<400> 6

```
Met Val Gly Lys Met Trp Pro Val Leu Trp Thr Leu Cys Ala Val
 1               5                  10                  15

Arg Val Thr Val Asp Ala Ile Ser Val Glu Thr Pro Gln Asp Val
            20                  25                  30

Leu Arg Ala Ser Gln Gly Lys Ser Val Thr Leu Pro Cys Thr Tyr
        35                  40                  45

His Thr Ser Thr Ser Ser Arg Glu Gly Leu Ile Gln Trp Asp Lys
    50                  55                  60

Leu Leu Leu Thr His Thr Glu Arg Val Val Ile Trp Pro Phe Ser
65                  70                  75

Asn Lys Asn Tyr Ile His Gly Glu Leu Tyr Lys Asn Arg Val Ser
            80                  85                  90

Ile Ser Asn Asn Ala Glu Gln Ser Asp Ala Ser Ile Thr Ile Asp
        95                  100                 105

Gln Leu Thr Met Ala Asp Asn Gly Thr Tyr Glu Cys Ser Val Ser
    110                 115                 120

Leu Met Ser Asp Leu Glu Gly Asn Thr Lys Ser Arg Val Arg Leu
125                 130                 135

Leu Val Leu Val Pro Pro Ser Lys Pro Glu Cys Gly Ile Glu Gly
            140                 145                 150

Glu Thr Ile Ile Gly Asn Asn Ile Gln Leu Thr Cys Gln Ser Lys
        155                 160                 165

Glu Gly Ser Pro Thr Pro Gln Tyr Ser Trp Lys Arg Tyr Asn Ile
    170                 175                 180

Leu Asn Gln Glu Gln Pro Leu Ala Gln Pro Ala Ser Gly Gln Pro
185                 190                 195

Val Ser Leu Lys Asn Ile Ser Thr Asp Thr Ser Gly Tyr Tyr Ile
            200                 205                 210

Cys Thr Ser Ser Asn Glu Glu Gly Thr Gln Phe Cys Asn Ile Thr
        215                 220                 225

Val Ala Val Arg Ser Pro Ser Met Asn Val Ala Leu Tyr Val Gly
    230                 235                 240

Ile Ala Val Gly Val Val Ala Ala Leu Ile Ile Ile Gly Ile Ile
245                 250                 255

Ile Tyr Cys Cys Cys Cys Arg Gly Lys Asp Asp Asn Thr Glu Asp
            260                 265                 270

Lys Glu Asp Ala Arg Pro Asn Arg Glu Ala Tyr Glu Glu Pro Pro
        275                 280                 285

Glu Gln Leu Arg Glu Leu Ser Arg Glu Arg Glu Glu Glu Asp Asp
    290                 295                 300

Tyr Arg Gln Glu Glu Gln Arg Ser Thr Gly Arg Glu Ser Pro Asp
305                 310                 315
```

His Leu Asp Gln

<210> 7
<211> 2181
<212> DNA
<213> Homo sapiens

<400> 7
cccacgcgtc cgcccacgcg tccgcccacg ggtccgccca cgcgtccggg 50

ccaccagaag tttgagcctc tttggtagca ggaggctgga agaaaggaca 100

gaagtagctc tggctgtgat ggggatctta ctgggcctgc tactcctggg 150

gcacctaaca gtggacactt atggccgtcc catcctggaa gtgccagaga 200

gtgtaacagg accttggaaa ggggatgtga atcttccctg cacctatgac 250

cccctgcaag gctacaccca agtcttggtg aagtggctgg tacaacgtgg 300

ctcagaccct gtcaccatct ttctacgtga ctcttctgga gaccatatcc 350

agcaggcaaa gtaccagggc cgcctgcatg tgagccacaa ggttccagga 400

gatgtatccc tccaattgag caccctggag atggatgacc ggagccacta 450

cacgtgtgaa gtcacctggc agactcctga tggcaaccaa gtcgtgagag 500

ataagattac tgagctccgt gtccagaaac tctctgtctc caagcccaca 550

gtgacaactg gcagcggtta tggcttcacg gtgccccagg gaatgaggat 600

tagccttcaa tgccaggctc ggggttctcc tcccatcagt tatatttggt 650

ataagcaaca gactaataac caggaaccca tcaaagtagc aaccctaagt 700

accttactct tcaagcctgc ggtgatagcc gactcaggct cctatttctg 750

cactgccaag ggccaggttg gctctgagca gcacagcgac attgtgaagt 800

ttgtggtcaa agactcctca aagctactca agaccaagac tgaggcacct 850

acaaccatga catacccctt gaaagcaaca tctacagtga agcagtcctg 900

ggactggacc actgacatgg atggctacct tggagagacc agtgctgggc 950

caggaaagag cctgcctgtc tttgccatca tcctcatcat ctccttgtgc 1000

tgtatggtgg tttttaccat ggcctatatc atgctctgtc ggaagacatc 1050

ccaacaagag catgtctacg aagcagccag gtaagaaagt ctctcctctt 1100

ccatttttga ccccgtccct gccctcaatt ttgattactg gcaggaaatg 1150

tggaggaagg ggggtgtggc acagacccaa tcctaaggcc ggaggccttc 1200

agggtcagga catagctgcc ttccctctct caggcacctt ctgaggttgt 1250

tttggccctc tgaacacaaa ggataattta gatccatctg ccttctgctt 1300

ccagaatccc tgggtggtag gatcctgata attaattggc aagaattgag 1350

gcagaagggt gggaaaccag gaccacagcc ccaagtccct tcttatgggt 1400

ggtgggctct tgggccatag ggcacatgcc agagaggcca acgactctgg 1450

agaaaccatg agggtggcca tcttcgcaag tggctgctcc agtgatgagc 1500

caacttccca gaatctgggc aacaactact ctgatgagcc ctgcatagga 1550

caggagtacc agatcatcgc ccagatcaat ggcaactacg cccgcctgct 1600

ggacacagtt cctctggatt atgagtttct ggccactgag ggcaaaagtg 1650

tctgttaaaa atgccccatt aggccaggat ctgctgacat aattgcctag 1700

tcagtccttg ccttctgcat ggccttcttc cctgctacct ctcttcctgg 1750

atagcccaaa gtgtccgcct accaacactg gagccgctgg gagtcactgg 1800

ctttgccctg gaatttgcca gatgcatctc aagtaagcca gctgctggat 1850

ttggctctgg gcccttctag tatctctgcc gggggcttct ggtactcctc 1900

tctaaatacc agagggaaga tgcccatagc actaggactt ggtcatcatg 1950

cctacagaca ctattcaact ttggcatctt gccaccagaa gacccgaggg 2000

aggctcagct ctgccagctc agaggaccag ctatatccag gatcatttct 2050

ctttcttcag ggccagacag cttttaattg aaattgttat ttcacaggcc 2100

agggttcagt tctgctcctc cactataagt ctaatgttct gactctctcc 2150

tggtgctcaa taaatatcta atcataacag c 2181

<210> 8
<211> 1295
<212> DNA
<213> Homo sapiens

<400> 8
cccagaagtt caagggcccc cggcctcctg cgctcctgcc gccgggaccc 50

tcgacctcct cagagcagcc ggctgccgcc ccgggaagat ggcgaggagg 100

agccgccacc gcctcctcct gctgctgctg cgctacctgg tggtcgccct 150

gggctatcat aaggcctatg ggttttctgc cccaaaagac caacaagtag 200

tcacagcagt agagtaccaa gaggctattt tagcctgcaa aaccccaaag 250

aagactgttt cctccagatt agagtggaag aaactgggtc ggagtgtctc 300

ctttgtctac tatcaacaga ctcttcaagg tgattttaaa aatcgagctg 350

agatgataga tttcaatatc cggatcaaaa atgtgacaag aagtgatgcg 400

gggaaatatc gttgtgaagt tagtgcccca tctgagcaag gccaaaacct 450

ggaagaggat acagtcactc tggaagtatt agtggctcca gcagttccat 500

catgtgaagt accctcttct gctctgagtg gaactgtggt agagctacga 550

tgtcaagaca aagaagggaa tccagctcct gaatacacat ggtttaagga 600

tggcatccgt ttgctagaaa atcccagact tggctcccaa agcaccaaca 650

gctcatacac aatgaataca aaaactggaa ctctgcaatt taatactgtt 700

tccaaactgg acactggaga atattcctgt gaagcccgca attctgttgg 750

atatcgcagg tgtcctggga aacgaatgca agtagatgat ctcaacataa 800

gtggcatcat agcagccgta gtagttgtgg ccttagtgat ttccgtttgt 850

ggccttggtg tatgctatgc tcagaggaaa ggctactttt caaaagaaac 900

ctccttccag aagagtaatt cttcatctaa agccacgaca atgagtgaaa 950

atgtgcagtg gctcacgcct gtaatcccag cactttggaa ggccgcggcg 1000

ggcggatcac gaggtcagga gttctagacc agtctggcca atatggtgaa 1050

accccatctc tactaaaata caaaaattag ctgggcatgg tggcatgtgc 1100

ctgcagttcc agctgcttgg gagacaggag aatcacttga acccgggagg 1150

cggaggttgc agtgagctga gatcacgcca ctgcagtcca gcctgggtaa 1200

cagagcaaga ttccatctca aaaaataaaa taaataaata aataaatact 1250

ggtttttacc tgtagaattc ttacaataaa tatagcttga tattc 1295

<210> 9
<211> 312
<212> PRT
<213> Homo sapiens

<400> 9

Met	Ala	Arg	Arg	Ser	Arg	His	Arg	Leu	Leu	Leu	Leu	Leu	Leu	Arg	
1				5					10					15	
Tyr	Leu	Val	Val	Ala	Leu	Gly	Tyr	His	Lys	Ala	Tyr	Gly	Phe	Ser	
				20					25					30	
Ala	Pro	Lys	Asp	Gln	Gln	Val	Val	Thr	Ala	Val	Glu	Tyr	Gln	Glu	
				35					40					45	
Ala	Ile	Leu	Ala	Cys	Lys	Thr	Pro	Lys	Lys	Thr	Val	Ser	Ser	Arg	
				50					55					60	
Leu	Glu	Trp	Lys	Lys	Leu	Gly	Arg	Ser	Val	Ser	Phe	Val	Tyr	Tyr	
				65					70					75	
Gln	Gln	Thr	Leu	Gln	Gly	Asp	Phe	Lys	Asn	Arg	Ala	Glu	Met	Ile	
				80					85					90	
Asp	Phe	Asn	Ile	Arg	Ile	Lys	Asn	Val	Thr	Arg	Ser	Asp	Ala	Gly	
				95					100					105	
Lys	Tyr	Arg	Cys	Glu	Val	Ser	Ala	Pro	Ser	Glu	Gln	Gly	Gln	Asn	
				110					115					120	
Leu	Glu	Glu	Asp	Thr	Val	Thr	Leu	Glu	Val	Leu	Val	Ala	Pro	Ala	
				125					130					135	
Val	Pro	Ser	Cys	Glu	Val	Pro	Ser	Ser	Ala	Leu	Ser	Gly	Thr	Val	
				140					145					150	

```
Val Glu Leu Arg Cys Gln Asp Lys Glu Gly Asn Pro Ala Pro Glu
                155                 160                 165

Tyr Thr Trp Phe Lys Asp Gly Ile Arg Leu Leu Glu Asn Pro Arg
                170                 175                 180

Leu Gly Ser Gln Ser Thr Asn Ser Ser Tyr Thr Met Asn Thr Lys
                185                 190                 195

Thr Gly Thr Leu Gln Phe Asn Thr Val Ser Lys Leu Asp Thr Gly
                200                 205                 210

Glu Tyr Ser Cys Glu Ala Arg Asn Ser Val Gly Tyr Arg Arg Cys
                215                 220                 225

Pro Gly Lys Arg Met Gln Val Asp Asp Leu Asn Ile Ser Gly Ile
                230                 235                 240

Ile Ala Ala Val Val Val Val Ala Leu Val Ile Ser Val Cys Gly
                245                 250                 255

Leu Gly Val Cys Tyr Ala Gln Arg Lys Gly Tyr Phe Ser Lys Glu
                260                 265                 270

Thr Ser Phe Gln Lys Ser Asn Ser Ser Ser Lys Ala Thr Thr Met
                275                 280                 285

Ser Glu Asn Val Gln Trp Leu Thr Pro Val Ile Pro Ala Leu Trp
                290                 295                 300

Lys Ala Ala Ala Gly Gly Ser Arg Gly Gln Glu Phe
                305                 310
```

<210> 10
<211> 300
<212> PRT
<213> Mus musculus

<400> 10

```
Met Gly Thr Glu Gly Lys Ala Gly Arg Lys Leu Leu Phe Leu Phe
  1                 5                  10                  15

Thr Ser Met Ile Leu Gly Ser Leu Val Gln Gly Lys Gly Ser Val
                 20                  25                  30

Tyr Thr Ala Gln Ser Asp Val Gln Val Pro Glu Asn Glu Ser Ile
                 35                  40                  45

Lys Leu Thr Cys Thr Tyr Ser Gly Phe Ser Ser Pro Arg Val Glu
                 50                  55                  60

Trp Lys Phe Val Gln Gly Ser Thr Thr Ala Leu Val Cys Tyr Asn
                 65                  70                  75

Ser Gln Ile Thr Ala Pro Tyr Ala Asp Arg Val Thr Phe Ser Ser
                 80                  85                  90

Ser Gly Ile Thr Phe Ser Ser Val Thr Arg Lys Asp Asn Gly Glu
                 95                 100                 105

Tyr Thr Cys Met Val Ser Glu Glu Gly Gly Gln Asn Tyr Gly Glu
                110                 115                 120
```

Val Ser Ile His Leu Thr Val Leu Val Pro Pro Ser Lys Pro Thr
125 130 135

Ile Ser Val Pro Ser Ser Val Thr Ile Gly Asn Arg Ala Val Leu
140 145 150

Thr Cys Ser Glu His Asp Gly Ser Pro Pro Ser Glu Tyr Ser Trp
155 160 165

Phe Lys Asp Gly Ile Ser Met Leu Thr Ala Asp Ala Lys Lys Thr
170 175 180

Arg Ala Phe Met Asn Ser Ser Phe Thr Ile Asp Pro Lys Ser Gly
185 190 195

Asp Leu Ile Phe Asp Pro Val Thr Ala Phe Asp Ser Gly Glu Tyr
200 205 210

Tyr Cys Gln Ala Gln Asn Gly Tyr Gly Thr Ala Met Arg Ser Glu
215 220 225

Ala Ala His Met Asp Ala Val Glu Leu Asn Val Gly Gly Ile Val
230 235 240

Ala Ala Val Leu Val Thr Leu Ile Leu Leu Gly Leu Leu Ile Phe
245 250 255

Gly Val Trp Phe Ala Tyr Ser Arg Gly Tyr Phe Glu Thr Thr Lys
260 265 270

Lys Gly Thr Ala Pro Gly Lys Lys Val Ile Tyr Ser Gln Pro Ser
275 280 285

Thr Arg Ser Glu Gly Glu Phe Lys Gln Thr Ser Ser Phe Leu Val
290 295 300

<210> 11
<211> 2181
<212> DNA
<213> Homo sapiens

<400> 11
cccacgcgtc cgcccacgcg tccgcccacg ggtccgccca cgcgtccggg 50

ccaccagaag tttgagcctc tttggtagca ggaggctgga agaaaggaca 100

gaagtagctc tggctgtgat ggggatctta ctgggcctgc tactcctggg 150

gcacctaaca gtggacactt atggccgtcc catcctggaa gtgccagaga 200

gtgtaacagg accttggaaa ggggatgtga atcttccctg cacctatgac 250

cccctgcaag gctacaccca agtcttggtg aagtggctgg tacaacgtgg 300

ctcagaccct gtcaccatct ttctacgtga ctcttctgga gaccatatcc 350

agcaggcaaa gtaccagggc cgcctgcatg tgagccacaa ggttccagga 400

gatgtatccc tccaattgag caccctggag atggatgacc ggagccacta 450

cacgtgtgaa gtcacctggc agactcctga tggcaaccaa gtcgtgagag 500

ataagattac tgagctccgt gtccagaaac tctctgtctc caagcccaca 550

gtgacaactg gcagcggtta tggcttcacg gtgccccagg gaatgaggat 600

tagccttcaa tgccaggctc ggggttctcc tcccatcagt tatatttggt 650

ataagcaaca gactaataac caggaaccca tcaaagtagc aaccctaagt 700

accttactct tcaagcctgc ggtgatagcc gactcaggct cctatttctg 750

cactgccaag ggccaggttg gctctgagca gcacagcgac attgtgaagt 800

ttgtggtcaa agactcctca aagctactca agaccaagac tgaggcacct 850

acaaccatga catacccctt gaaagcaaca tctacagtga agcagtcctg 900

ggactggacc actgacatgg atggctacct tggagagacc agtgctgggc 950

caggaaagag cctgcctgtc tttgccatca tcctcatcat ctccttgtgc 1000

tgtatggtgg tttttaccat ggcctatatc atgctctgtc ggaagacatc 1050

ccaacaagag catgtctacg aagcagccag gtaagaaagt ctctcctctt 1100

ccatttttga ccccgtccct gccctcaatt ttgattactg gcaggaaatg 1150

tggaggaagg ggggtgtggc acagacccaa tcctaaggcc ggaggccttc 1200

agggtcagga catagctgcc ttccctctct caggcacctt ctgaggttgt 1250

tttggccctc tgaacacaaa ggataattta gatccatctg ccttctgctt 1300

ccagaatccc tgggtggtag gatcctgata attaattggc aagaattgag 1350

gcagaagggt gggaaaccag gaccacagcc ccaagtccct tcttatgggt 1400

ggtgggctct tgggccatag ggcacatgcc agagaggcca acgactctgg 1450

agaaaccatg agggtggcca tcttcgcaag tggctgctcc agtgatgagc 1500

caacttccca gaatctgggc aacaactact ctgatgagcc ctgcatagga 1550

caggagtacc agatcatcgc ccagatcaat ggcaactacg cccgcctgct 1600

ggacacagtt cctctggatt atgagtttct ggccactgag ggcaaaagtg 1650

tctgttaaaa atgccccatt aggccaggat ctgctgacat aattgcctag 1700

tcagtccttg ccttctgcat ggccttcttc cctgctacct ctcttcctgg 1750

atagcccaaa gtgtccgcct accaacactg gagccgctgg gagtcactgg 1800

ctttgccctg gaatttgcca gatgcatctc aagtaagcca gctgctggat 1850

ttggctctgg gcccttctag tatctctgcc gggggcttct ggtactcctc 1900

tctaaatacc agagggaaga tgcccatagc actaggactt ggtcatcatg 1950

cctacagaca ctattcaact ttggcatctt gccaccagaa gacccgaggg 2000

aggctcagct ctgccagctc agaggaccag ctatatccag gatcatttct 2050

ctttcttcag ggccagacag cttttaattg aaattgttat ttcacaggcc 2100

agggttcagt tctgctcctc cactataagt ctaatgttct gactctctcc 2150

tggtgctcaa taaatatcta atcataacag c 2181

<210> 12
<211> 24
<212> DNA
<213> artificial sequence

<220>
<223> artificial sequence

<400> 12
tcgcggagct gtgttctgtt tccc 24

<210> 13
<211> 50
<212> DNA
<213> artificial sequence

<220>
<223> artificial sequence

<400> 13
tgatcgcgat ggggacaaag gcgcaagctc gagaggaaac tgttgtgcct 50

<210> 14
<211> 20
<212> DNA
<213> artificial sequence

<220>
<223> artificial sequence

<400> 14
acacctggtt caaagatggg 20

<210> 15
<211> 24
<212> DNA
<213> artificial sequence

<220>
<223> artificial sequence

<400> 15
taggaagagt tgctgaaggc acgg 24

<210> 16
<211> 20
<212> DNA
<213> artificial sequence

<220>
<223> artificial sequence

<400> 16
ttgccttact caggtgctac 20

<210> 17
<211> 20
<212> DNA
<213> artificial sequence

<220>

<223> artificial sequence

<400> 17
actcagcagt ggtaggaaag 20

<210> 18
<211> 24
<212> DNA
<213> artificial sequence

<220>
<223> artificial sequence

<400> 18
tatccctcca attgagcacc ctgg 24

<210> 19
<211> 21
<212> DNA
<213> artificial sequence

<220>
<223> artificial sequence

<400> 19
gtcggaagac atcccaacaa g 21

<210> 20
<211> 24
<212> DNA
<213> artificial sequence

<220>
<223> artificial sequence

<400> 20
cttcacaatg tcgctgtgct gctc 24

<210> 21
<211> 24
<212> DNA
<213> artificial sequence

<220>
<223> artificial sequence

<400> 21
agccaaatcc agcagctggc ttac 24

<210> 22
<211> 50
<212> DNA
<213> artificial sequence

<220>
<223> artificial sequence

<400> 22
tggatgaccg gagccactac acgtgtgaag tcacctggca gactcctgat 50

<210> 23
<211> 260
<212> PRT

<213> Homo sapiens

<400> 23

```
Leu Ala Leu Gly Ser Val Thr Val His Ser Ser Glu Pro Glu Val
  1               5                  10                  15

Arg Ile Pro Glu Asn Asn Pro Val Lys Leu Ser Cys Ala Tyr Ser
             20                  25                  30

Gly Phe Ser Ser Pro Arg Val Glu Trp Lys Phe Asp Gln Gly Asp
             35                  40                  45

Thr Thr Arg Leu Val Cys Tyr Asn Asn Lys Ile Thr Ala Ser Tyr
             50                  55                  60

Glu Asp Arg Val Thr Phe Leu Pro Thr Gly Ile Thr Phe Lys Ser
             65                  70                  75

Val Thr Arg Glu Asp Thr Gly Thr Tyr Thr Cys Met Val Ser Glu
             80                  85                  90

Glu Gly Gly Asn Ser Tyr Gly Glu Val Lys Val Lys Leu Ile Val
             95                 100                 105

Leu Val Pro Pro Ser Lys Pro Thr Val Asn Ile Pro Ser Ser Ala
            110                 115                 120

Thr Ile Gly Asn Arg Ala Val Leu Thr Cys Ser Glu Gln Asp Gly
            125                 130                 135

Ser Pro Pro Ser Glu Tyr Thr Trp Phe Lys Asp Gly Ile Val Met
            140                 145                 150

Pro Thr Asn Pro Lys Ser Thr Arg Ala Phe Ser Asn Ser Ser Tyr
            155                 160                 165

Val Leu Asn Pro Thr Thr Gly Glu Leu Val Phe Asp Pro Leu Ser
            170                 175                 180

Ala Ser Asp Thr Gly Glu Tyr Ser Cys Glu Ala Arg Asn Gly Tyr
            185                 190                 195

Gly Thr Pro Met Thr Ser Asn Ala Val Arg Met Glu Ala Val Glu
            200                 205                 210

Arg Asn Val Gly Val Ile Val Ala Ala Val Leu Val Thr Leu Ile
            215                 220                 225

Leu Leu Gly Ile Leu Val Phe Gly Ile Trp Phe Ala Tyr Ser Arg
            230                 235                 240

Gly His Phe Asp Arg Thr Lys Lys Gly Thr Ser Ser Lys Lys Val
            245                 250                 255

Ile Tyr Ser Gln Pro
            260
```

<210> 24
<211> 270
<212> PRT
<213> Homo sapiens

<400> 24

```
Val Arg Val Thr Val Asp Ala Ile Ser Val Glu Thr Pro Gln Asp
 1               5                  10                  15

Val Leu Arg Ala Ser Gln Gly Lys Ser Val Thr Leu Pro Cys Thr
            20                  25                  30

Tyr His Thr Ser Thr Ser Ser Arg Glu Gly Leu Ile Gln Trp Asp
            35                  40                  45

Lys Leu Leu Leu Thr His Thr Glu Arg Val Val Ile Trp Pro Phe
            50                  55                  60

Ser Asn Lys Asn Tyr Ile His Gly Glu Leu Tyr Lys Asn Arg Val
            65                  70                  75

Ser Ile Ser Asn Asn Ala Glu Gln Ser Asp Ala Ser Ile Thr Ile
            80                  85                  90

Asp Gln Leu Thr Met Ala Asp Asn Gly Thr Tyr Glu Cys Ser Val
            95                 100                 105

Ser Leu Met Ser Asp Leu Glu Gly Asn Thr Lys Ser Arg Val Arg
           110                 115                 120

Leu Leu Val Leu Val Pro Pro Ser Lys Pro Glu Cys Gly Ile Glu
           125                 130                 135

Gly Glu Thr Ile Ile Gly Asn Asn Ile Gln Leu Thr Cys Gln Ser
           140                 145                 150

Lys Glu Gly Ser Pro Thr Pro Gln Tyr Ser Trp Lys Arg Tyr Asn
           155                 160                 165

Ile Leu Asn Gln Glu Gln Pro Leu Ala Gln Pro Ala Ser Gly Gln
           170                 175                 180

Pro Val Ser Leu Lys Asn Ile Ser Thr Asp Thr Ser Gly Tyr Tyr
           185                 190                 195

Ile Cys Thr Ser Ser Asn Glu Glu Gly Thr Gln Phe Cys Asn Ile
           200                 205                 210

Thr Val Ala Val Arg Ser Pro Ser Met Asn Val Ala Leu Tyr Val
           215                 220                 225

Gly Ile Ala Val Gly Val Val Ala Ala Leu Ile Ile Ile Gly Ile
           230                 235                 240

Ile Ile Tyr Cys Cys Cys Cys Arg Gly Lys Asp Asp Asn Thr Glu
           245                 250                 255

Asp Lys Glu Asp Ala Arg Pro Asn Arg Glu Ala Tyr Glu Glu Pro
           260                 265                 270
```

<210> 25
<211> 263
<212> PRT
<213> Homo sapiens

<400> 25

```
Leu Cys Ser Leu Ala Leu Gly Ser Val Thr Val His Ser Ser Glu
 1               5                  10                  15
```

```
Pro Glu Val Arg Ile Pro Glu Asn Asn Pro Val Lys Leu Ser Cys
                  20                  25                  30

Ala Tyr Ser Gly Phe Ser Ser Pro Arg Val Glu Trp Lys Phe Asp
                  35                  40                  45

Gln Gly Asp Thr Thr Arg Leu Val Cys Tyr Asn Asn Lys Ile Thr
                  50                  55                  60

Ala Ser Tyr Glu Asp Arg Val Thr Phe Leu Pro Thr Gly Ile Thr
                  65                  70                  75

Phe Lys Ser Val Thr Arg Glu Asp Thr Gly Thr Tyr Thr Cys Met
                  80                  85                  90

Val Ser Glu Glu Gly Gly Asn Ser Tyr Gly Glu Val Lys Val Lys
                  95                 100                 105

Leu Ile Val Leu Val Pro Pro Ser Lys Pro Thr Val Asn Ile Pro
                 110                 115                 120

Ser Ser Ala Thr Ile Gly Asn Arg Ala Val Leu Thr Cys Ser Glu
                 125                 130                 135

Gln Asp Gly Ser Pro Pro Ser Glu Tyr Thr Trp Phe Lys Asp Gly
                 140                 145                 150

Ile Val Met Pro Thr Asn Pro Lys Ser Thr Arg Ala Phe Ser Asn
                 155                 160                 165

Ser Ser Tyr Val Leu Asn Pro Thr Thr Gly Glu Leu Val Phe Asp
                 170                 175                 180

Pro Leu Ser Ala Ser Asp Thr Gly Glu Tyr Ser Cys Glu Ala Arg
                 185                 190                 195

Asn Gly Tyr Gly Thr Pro Met Thr Ser Asn Ala Val Arg Met Glu
                 200                 205                 210

Ala Val Glu Arg Asn Val Gly Val Ile Val Ala Ala Val Leu Val
                 215                 220                 225

Thr Leu Ile Leu Leu Gly Ile Leu Val Phe Gly Ile Trp Phe Ala
                 230                 235                 240

Tyr Ser Arg Gly His Phe Asp Arg Thr Lys Lys Gly Thr Ser Ser
                 245                 250                 255

Lys Lys Val Ile Tyr Ser Gln Pro
                 260

<210> 26
<211> 273
<212> PRT
<213> Homo sapiens

<400> 26
 Leu Cys Ala Val Arg Val Thr Val Asp Ala Ile Ser Val Glu Thr
   1               5                  10                  15

 Pro Gln Asp Val Leu Arg Ala Ser Gln Gly Lys Ser Val Thr Leu
                  20                  25                  30
```

```
Pro Cys Thr Tyr His Thr Ser Thr Ser Ser Arg Glu Gly Leu Ile
                35                  40                  45

Gln Trp Asp Lys Leu Leu Leu Thr His Thr Glu Arg Val Val Ile
                50                  55                  60

Trp Pro Phe Ser Asn Lys Asn Tyr Ile His Gly Glu Leu Tyr Lys
                65                  70                  75

Asn Arg Val Ser Ile Ser Asn Asn Ala Glu Gln Ser Asp Ala Ser
                80                  85                  90

Ile Thr Ile Asp Gln Leu Thr Met Ala Asp Asn Gly Thr Tyr Glu
                95                 100                 105

Cys Ser Val Ser Leu Met Ser Asp Leu Glu Gly Asn Thr Lys Ser
               110                 115                 120

Arg Val Arg Leu Leu Val Leu Val Pro Pro Ser Lys Pro Glu Cys
               125                 130                 135

Gly Ile Glu Gly Glu Thr Ile Ile Gly Asn Asn Ile Gln Leu Thr
               140                 145                 150

Cys Gln Ser Lys Glu Gly Ser Pro Thr Pro Gln Tyr Ser Trp Lys
               155                 160                 165

Arg Tyr Asn Ile Leu Asn Gln Glu Gln Pro Leu Ala Gln Pro Ala
               170                 175                 180

Ser Gly Gln Pro Val Ser Leu Lys Asn Ile Ser Thr Asp Thr Ser
               185                 190                 195

Gly Tyr Tyr Ile Cys Thr Ser Ser Asn Glu Glu Gly Thr Gln Phe
               200                 205                 210

Cys Asn Ile Thr Val Ala Val Arg Ser Pro Ser Met Asn Val Ala
               215                 220                 225

Leu Tyr Val Gly Ile Ala Val Gly Val Val Ala Ala Leu Ile Ile
               230                 235                 240

Ile Gly Ile Ile Ile Tyr Cys Cys Cys Cys Arg Gly Lys Asp Asp
               245                 250                 255

Asn Thr Glu Asp Lys Glu Asp Ala Arg Pro Asn Arg Glu Ala Tyr
               260                 265                 270

Glu Glu Pro
```

<210> 27
<211> 413
<212> DNA
<213> artificial sequence

<220>
<223> artificial sequence

<400> 27
ctcgagccgc tcgagccgtg cggggaaata tcgttgtgaa gttagtgccc 50

catctgagca aggccaaaac ctggaagagg atacagtcac tctggaagta 100

ttagtggctc cagcagttcc atcatgtgaa gtaccctctt ctgctctgag 150

tggaactgtg gtagagctac gatgtcaaga caaagaaggg aatccagctc 200

ctgaatacac atggtttaag gatggcatcc gtttgctaga aaatcccaga 250

cttggctccc aaagcaccaa cagctcatac acaatgaata caaaaactgg 300

aactctgcaa tttaatactg tttccaaact ggacactgga gaatattcct 350

gtgaagcccg caattctgtt ggatatcgca ggtgtcctgg ggaaacgaat 400

gcaagtagat gat 413

<210> 28
<211> 22
<212> DNA
<213> artificial sequence

<220>
<223> artificial sequence

<400> 28
atcgttgtga agttagtgcc cc 22

<210> 29
<211> 23
<212> DNA
<213> artificial sequence

<220>
<223> artificial sequence

<400> 29
acctgcgata tccaacagaa ttg 23

<210> 30
<211> 48
<212> DNA
<213> artificial sequence

<220>
<223> artificial sequence

<400> 30
ggaagaggat acagtcactc tggaagtatt agtggctcca gcagttcc 48